

PRE-ENGINEERING PROJECT

SKOLELINUX - USER ADMINISTRATION

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By group 8:

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INDEX

1. GOALS AND SETTING	3
1.1 BACKGROUND.....	3
1.2 PROJECT GOAL.....	3
1.3 SETTING.....	4
2. EXTENT	5
3. PROJECT ORGANIZATION	6
3.1 RESPONSIBILITY RELATIONSHIPS.....	6
3.2 OTHER ROLES AND PARTICIPANTS.....	6
4. PLANNING AND REPORTING	7
4.1 MAIN CLASSIFICATION OF THE PROJECT.....	7
4.2 DEMANDS OF STATUS MEETINGS AND POINTS OF DECISIONS	7
5. ORGANIZATION OF QUALITY ASSURANCE	9
5.1 GROUP RULES.....	9
5.2 DOCUMENTS AND OTHER FACTORS.....	9
5.3 BACKUP.....	9
5.4 LOGGING.....	9
6. SCHEDULE	10
6.1 LIST OF ACTIVITIES.....	10
6.2 MILESTONES.....	10
6.3 INCREMENTS.....	10
6.4 TIME AND RESOURCE SCHEMES.....	11
REFERENCES	12
APPENDIX	13

1. GOALS AND SETTING

1.1 BACKGROUND

A “main project” is a final project that every student at Gjøvik College has to carry out in the last term of a three year long Bachelor of Engineering Education. It has a stipulated workload of 18 ECTS points. The project period is from January 2003 with a deadline at May 19 2003.

The official guidelines for the main project says that students are to:

- Execute a larger independent task of interdisciplinary nature.
- Plan, find solutions and produce documentation of these.
- Getting comprehension of advantages and drawbacks of working in a group.
- Realize the importance of making and following-up of plans.
- Getting a positive attitude to method- and problem-oriented way of work and a ability to access different alternatives.

“Skolelinux – user administration” is a part of the bigger Skolelinux project. Skolelinux is a project to create a Linux solution aimed at Norwegian schools. July the 2nd 2001, an initiating meeting was summoned for the Skolelinux project. On this meeting it was decided that Skolelinux should be based on the Debian distribution of Linux. The participants also agreed that the Skolelinux project should provide Norwegian user applications in the two Norwegian dialects, Nynorsk and Bokmål, and in the Sámi language.

Because Skolelinux is a system that will be used by many different users, it also need a module for user administration. This is the main background for our project.

1.2 PROJECT GOAL

The project goal

Make it possible for teachers with minimal computer competence to administrate users in a simple way. Create a simple user manual for the teachers who administrate a Skolelinux network.

The technical goal

Implement a directory service that handles e-mail accounts and printing quotas.

User names, passwords and home area is already implemented in the Skolelinux distribution, but the capability for user groups is missing. The administrators need a way to group accounts in classes, students, teachers, and administrative users.

Another important task is to make the directory service ready for implementation in the Skolelinux distribution.

The technical goal may expand during the project period.

The effect goal

Another goal of the project is also to exploit and develop our competence in both the technical aspect and the aspect of being part of a large system engineering project.

1.3 SETTING

The project is carried out in Gjøvik College (HiG).

HiG has provided us with a group room that we share with one other student group. HiG has also provided us with two computers and each of us have our own computer sited in the group room.

Our teaching supervisor is Erik Hjelmås who is a teacher at HiG. The contact with the Skolelinux organization is maintained by mail, development seminars and meetings.

2. EXTENT

To implement the directory service we will use openLDAP (Lightweight Directory Access Protocol).

Focus of the project is the architecture of LDAP directory service. The GUI is developed by another Skolelinux project group at NITH (Norges Informasjons Teknologiske Høyskole).

The employers demand is that the application must rather be simple and ready to implement, than complex and not fully tested.

3. PROJECT ORGANIZATION

3.1 RESPONSIBILITY RELATIONSHIPS

Employer: Frode Jemtland, Skolelinux.

Teaching supervisor: Erik Hjelmås, HiG.

The group has chosen a project model without a project leader. This is because of the small size of our group and that we plan to work in a close collaboration. We all take the responsibility for the project becoming a success.

3.2 OTHER ROLES AND PARTICIPANTS

Group participants: Trond Christian Frøhaug, Ole Martin Dahl and Morten Sporild.

Contact person: Trond Christian Frøhaug

Backup of all the project material: Trond Christian Frøhaug

Updating the web site: Ole Martin Dahl

Keeping the minute book up to date: Morten Sporild

4. PLANING AND REPORTING

4.1 MAIN CLASSIFICATION OF THE PROJECT

The project was divided into four sections:

I Pre-engineering

- Establish contact with the employer
- Preparation of the group room
- Build “Skolelinux” test network and install the latest release
- Pre-engineering report
- Conferences with our teaching supervisor
- Gather information

II Research

- Find information and learn about LDAP
- Formulate requirement specification document

III Main section

- Program the OpenLDAP underlying module structure
- Testing in our own test network
- Report bugs
- Troubleshooting
- Testing in a real “Skolelinux”-environment
- Feedback from teacher supervisor and employer
- Writing Norwegian user manual
- Continuously update the project's website

IV Project closure

- Finalizing the project report
- Presentation of the project

Because this is a school project we have chosen a incremental system engineering model. Each increment is developed and tested in the main section. We think that this engineering model fits us well because it gives us a well tested, and good product regarding to the employers demand. The model gives us a well documented product, it handles changes and it is controllable. Each increment can also be seen as a finished module.

The system engineering model will bear the stamp of open source development.

The basic idea behind open source is very simple: “when programmers can read, redistribute and modify the source code for a piece of software, the software evolves. People improve it, people adapt it, people fix bugs. And this can happen at a speed that, if one is used to the slow pace of conventional software development, seems astonishing [1]”. The contact with the other developers in the Skolelinux project is maintained by a mailing list.

4.2 DEMANDS OF STATUS MEETINGS AND POINTS OF DECISIONS

We plan to have one meeting with our teaching supervisor every second Tuesday to discuss status of the project, problems and other challenges.

The contact with other Skolelinux developers will be maintained through a Skolelinux mailing list.

Throughout the project period we have decided to have 7 status meetings with our teaching supervisor. From three of these meetings we will make status reports that will follow a given standard from Gjøvik College.

Status meeting dates:

- February 4, 2003
- February 18, 2003 followed up by a status meeting report.
- March 4, 2003
- March 18, 2003 followed up by a status meeting report.
- April 1, 2003
- April 29, 2003 followed up by a status meeting report.
- May 13, 2003

Major decisions regarding the application will be taken in agreement with our employer. All important decisions should be written down in a log. Meeting reports will be written in turn by each group participants.

5. ORGANIZATION OF QUALITY ASSURANCE

5.1 GROUP RULES

- All expenses must be documented and shared among the group members.
- Each member is bound to meet at times agreed upon. If a group member is ill or can't take part of some other cause, the group member must tell the other members right away.
- Each member is responsible for progress and quality assurance.
- Each group member have professional secrecy regarding personal relationships about the group members.

5.2 DOCUMENTS AND OTHER FACTORS

- All documents has to be written in OpenOffice.org.
- All documents must be stored in the project disk area provided by HiG.
- The pre-engineering project, main project and website will be written in English.
- The user manual (simple edition) will be written in Norwegian.
- All finished documents must be printed out and stored.

5.3 BACKUP

- All work will be stored at:
 - <Not provided by HiG at this time>.
- Backup of our work must be burned out on a CD-R disk each Friday.
- The backup is stored at one of the group members home.

5.4 LOGGING

- All configuration and programming must be commented and logged.
- All meeting reports must be logged.

6. SCHEDULE

6.1 LIST OF ACTIVITIES

- Preparation of the group room.
- Develop and maintain website.
- Installation of software.
- Finishing pre-engineering project.
- Develop requirement specification.
- Research
- Program the OpenLDAP underlying module structure.
 - LDAP structure modification.
 - Email accounts.
 - Printing quotas
- Report writing
- Testing and bug fixing.
- Develop the Norwegian user manual.
- Finish the main project report.
- Prepare the presentation.
- Present the project.

6.2 MILESTONES

- Hand-in the pre-engineering project. **January 24, 2003.**
- Finish the requirement specification. **February 4, 2003.**
- Finish the programming. **April 2, 2003.**
- Finish the LDAP module, Norwegian user manual. **May 12, 2003.**
- Complete the main project report. **May 16, 2003.**
- Present the project. **May 26, 2003.**

6.3 INCREMENTS

The development section will be divided into 3 increments.

- **Increment 1 LDAP structure modification.**
 - Group accounts in classes, students, teachers, and administrative users.

- Test the increment.
- Document the implementation.
- **Increment 2 Implement e-mail accounts.**
 - Implement e-mail accounts for the different users.
 - Test the increment.
 - Document the implementation.
- **Increment 3 Implement printing quotas.**
 - Implement printing quotas for the different users
 - Test the increment.
 - Document the implementation.

6.4 TIME AND RESOURCE SCHEMES

All the time limits from the time scheme (Gantt-chart) should be observed as far as possible. The most important is to keep the time limits regarding to delivering the hand-ins. The Gantt-chart will be updated during the project period. See Gantt-chart.

REFERENCES

[1] www.opensource.org